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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,635	10/23/2003	Kunihiko Fukuchi	740756-2661	9151

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EXAMINER	
MCDONALD, RODNEY GLENN	
ART UNIT	**PAPER NUMBER**
1753	

DATE MAILED: 12/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/690,635	FUKUCHI ET AL.	
	Examiner	Art Unit	
	Rodney G. McDonald	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 October 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 31-54* is/are pending in the application.

4a) Of the above claim(s) *51-54* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 31-50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

Newly submitted claims 51-54 directed to an invention that is independent or distinct from the invention originally claimed for the following reasons:

The method of manufacturing the light emitting device requires different elements than the method of forming the semiconductor film and the sputtering system. Therefore it is independent or distinct form the invention originally claimed.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 51-54 withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 31-35 and 39-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsura (U.S. Pat. 4,933,063) in view of Noriaki et al. (Japan 08-277461) and Sproul et al. (U.S. Pat. 5,942,089).

Katsura et al. teach a sputtering system. The target material is formed of high purity quartz (i.e. SiO_2). Thus the target comprises the semiconductor material of Si. (Column 3 lines 49-50) A protection plate and substrate holder 18 are formed of stainless steel, and side surfaces of protection plate and substrate holder near target 16 are entirely coated with quartz films 15b and 18A (i.e. films of SiO_2) . Thus the coating on the parts of the apparatus comprises a semiconductor material and the coating is an oxide of semiconductor material. (Column 3 lines 65-68) The film formed was SiO_2 which is an oxide of the semiconductor material. (Column 4 lines 63-65) A rare gas of argon is utilized for sputtering. (Column 16 lines 27-32) A high frequency power source is used for sputtering. (Column 4 lines 12-15) The substrate holder can be coated with the SiO_2 for example. (Column 2 lines 65-68)

The differences between Katsura et al. and the present claims is that the target material being only the semiconductor material of silicon is not discussed and utilizing spray coating to coat the parts of the chamber.

Katsura et al. recognize that not only silicon dioxide targets can be used for the target but other metals that might peel off. (Column 6 lines 15-22) Sproul et al. teach

that numerous metals including silicon can be used for target material for depositing oxides in atmospheres of oxygen and argon. (Column 5 lines 43-46)

The motivation for utilizing a silicon target is that it allows for deposition of compound films. (Column 5 lines 34-35)

Noriaki teach thermal spray coating of SiO_2 on parts of the sputtering chamber prior to sputter coating in order to minimize dust generation. (See Abstract)

The motivation for utilizing a thermal spray coating of SiO_2 is that it allows for minimizing dust generation. (See Abstract)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Katsura et al. by utilizing a target of silicon as taught by Sproul et al. and to have utilized a spray coating of silicon dioxide on surfaces of the chamber as taught by Noriaki et al. because it allows for depositing compound films while minimizing dust generation.

Claims 36-38 and 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Katsura in view of Noriaki et al. and Sproul et al. as applied to claims 1, 31-35 and 39-46 above, and further in view of Shibasaki et al. (U.S. Pat. 6,499,581).

The differences not yet discussed are where the sprayed material is a nitride and where the film deposited is a nitride.

Regarding the sprayed material being a nitride material, Shibasaki et al. teach utilizing a nitride film in place of an oxide film for preventing peeling. (See Abstract; Column 3 lines 33-37) Therefore, it would be obvious to utilize a nitride film of silicon in

place of the oxide film of silicon because Shibasaki et al. recognize the equivalence between an oxide film and a nitride film for preventing peeling.

Regarding the deposition of a nitride film, Sproul et al. recognize utilizing a reactive gas to deposit oxide or nitride films. (Column 7 lines 50-68; Column 8 lines 40-68)

The motivation for depositing a nitride film is that it allows deposition of compound film. (Column 7 lines 50-68)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have utilized a sprayed nitride material as taught by Shibasaki et al. and to have deposited a nitride film as taught by Shibasaki et al. because it allows for preventing peeling of film and depositing compound films.

Response to Arguments

Applicant's arguments filed October 25, 2005 have been fully considered but they are not persuasive.

At the outset it should noted that Sato et al. has been withdrawn because Sato et al. does not teach the semiconductor target in combination with Applicant's sprayed material.

In response to the argument that Katsura et al. and Noriaki et al. fail to teach a semiconductor target, it is argued that as originally presented the claims required a target which comprised a semiconductor material. Clearly a semiconductor material is silicon and the comprising language allows the target to include other components. Applicant has now amended the claims to limit the target material to be "a

semiconductor target material comprising a semiconductor material". The examiner has put forth Sproul to show that the replacement of a silicon dioxide target with Sproul's teaching of a target of silicon would have been obvious. Katsura et al. contemplate that metals could be used in their apparatus and that the silicon dioxide coated components would still prevent antipeeling. Sproul teach that metals such as silicon can be used in sputtering. Therefore it would be obvious to substitute a silicon dioxide target with a silicon target as shown by the art as a whole. It is also useful to consider that both Sproul and Katsura et al. are concerned with depositing compound films of silicon. (See Sproul and Katsura et al. discussed above)

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rodney G. McDonald whose telephone number is 571-272-1340. The examiner can normally be reached on M- Th with Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Rodney G. McDonald
Primary Examiner
Art Unit 1753

RM
December 8, 2005